WE CLAIM:

1. A method of writing product servo sectors to a disk of a disk drive, the disk drive comprising control circuitry and a head disk assembly (HDA) comprising the disk, an actuator arm, a head connected to a distal end of the actuator arm, and a voice coil motor for rotating the actuator arm about a pivot to position the head radially over the disk, the disk comprising a plurality of spiral tracks, wherein each spiral track comprises a high frequency signal interrupted at a predetermined interval by a sync mark, the method comprising the steps of:

(a) using the head internal to the disk drive to read the high frequency signal in the spiral tracks to generate a position error signal used to maintain the head along a substantially circular target path;

(b) using the head internal to the disk drive to read the sync marks in the spiral tracks to generate a spiral sync mark detect signal;

(c) generating a coarse timing recovery measurement in response to the spiral sync mark detect signal;

(d) generating a fine timing recovery measurement in response to the high frequency signal in the spiral tracks;

(e) synchronizing a servo write clock in response to the coarse timing recovery measurement and the fine timing recovery measurement; and

(f) using the servo write clock and the head internal to the disk drive to write the product servo sectors along the circular target path.

2. The method as recited in claim 1, wherein the spiral tracks are written to the disk using an external spiral servo writer.

3. The method as recited in claim 1, wherein the step of using the head internal to the disk drive to read the sync marks in the spiral tracks comprises the steps of:

(a) generating synchronous read signal sample values representing the sync marks; and

(b) evaluating the synchronous read signal sample values to detect the sync marks.

4. The method as recited in claim 3, wherein the step of generating the synchronous read signal sample values representing the sync marks comprises the step of sampling a read signal emanating from the head using the servo write clock.

5. The method as recited in claim 1, wherein the step of generating the coarse timing recovery measurement comprises the step of comparing an expected value of a modulo N counter to an actual value of the modulo N counter when one of the sync marks is detected.

6. The method as recited in claim 1, wherein the step of generating the fine timing recovery measurement comprises the step of computing a timing gradient in response to expected read signal sample values and actual read signal sample values.

7. The method as recited in claim 1, wherein the control circuitry within the disk drive is used to read the spiral tracks in order to synchronize the servo write clock.

8. The method as recited in claim 1, wherein an external product servo writer is used to read the spiral tracks in order to synchronize the servo write clock.

9. A disk drive comprising:

(a) a disk comprising a plurality of spiral tracks, wherein each spiral track comprises a high frequency signal interrupted at a predetermined interval by a sync mark;

(b) an actuator arm;

(c) a head connected to a distal end of the actuator arm;

(d) a voice coil motor for rotating the actuator arm about a pivot to position the head radially over the disk; and

(e) control circuitry for writing a plurality of product servo sectors to the disk to define a plurality of radially spaced, concentric data tracks by:

using the head internal to the disk drive to read the high frequency signal in the spiral tracks to generate a position error signal used to maintain the head along a substantially circular target path;

using the head internal to the disk drive to read the sync marks in the spiral tracks to generate a spiral sync mark detect signal;

generating a coarse timing recovery measurement in response to the spiral sync mark detect signal;

generating a fine timing recovery measurement in response to the high frequency signal in the spiral tracks;

synchronizing a servo write clock in response to the coarse timing recovery measurement and the fine timing recovery measurement; and

using the servo write clock and the head internal to the disk drive to write the product servo sectors along the circular target path.

10. The disk drive as recited in claim 9, wherein the spiral tracks are written to the disk using an external spiral servo writer.

11. The disk drive as recited in claim 9, wherein the control circuitry for:

(a) generating synchronous read signal sample values representing the sync marks; and

(b) evaluating the synchronous read signal sample values to detect the sync marks.

12. The disk drive as recited in claim 11, wherein the control circuitry for sampling a read signal emanating from the head using the servo write clock to generate the synchronous read signal sample values.

13. The disk drive as recited in claim 9, wherein the control circuitry generates the coarse timing recovery measurement by comparing an expected value of a modulo N counter to an actual value of the modulo N counter when one of the sync marks is detected.

14. The disk drive as recited in claim 9, wherein the control circuitry generates the fine timing recovery measurement by computing a timing gradient in response to expected read signal sample values and actual read signal sample values.